

- (460) 811. *Creophora cinerea* Wattled Starling. Ten on 23.vii and one male in breeding dress 30.viii.
- (471) 814. *Buphagus erythrorhynchus* Red-billed Oxpecker. Seen frequently on camels, goats and donkeys passing through Fah.
- (453) 815. *Oriolus oriolus* Golden Oriole. A male, 27.viii, was the first of many passing through. 1-2 seen daily to 24.ix Smith recorded it as a common autumn and spring passage migrant, from 1.ix to third week of x. Mann (1971) recorded them on the Dahlaks on 28-29.viii.
- (459) 824. *Corvus ruficollis* Brown-necked Raven. Seen sporadically throughout our stay.

Acknowledgement: I would like to thank Dr. J. S. Ash for reading and commenting on an earlier draft of this paper.

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On the validity of *Alcedo cristata robertsi* Peters, 1945

by P. A. Clancey

Received 21 January 1978

Sharpe (1892) appears to have been the first to demonstrate the existence of geographical variation in the continental African populations of the Malachite Kingfisher *Alcedo cristata* Pallas, 1764: Cape of Good Hope, Cape. Salomonsen (1934) and other workers in the 1930's acknowledged this variation by recognising the nominate subspecies from South Africa, placing the other continental populations in *A. c. galerita* Müller, 1776: Senegal. Roberts (1932, 1935) described and recognised a third subspecies from the arid interior of southern Africa: *Corythornis cristata longirostris* (1932), the type-locality of which is Kabulabula, Chobe R., northern Botswana. As pointed out by Peters (1945), when the Genus *Corythornis* is merged with *Alcedo*, Roberts' name *longirostris* is not available because of the prior *Alcedo longirostris* Radde, 1884: Caucasus, a synonym of *A. atthis atthis* (Linnaeus), 1758. To replace the pre-occupied *A. c. longirostris* (Roberts), 1932, Peters proposed *A. c. robertsi*.

In their important study of birds from Gabon and the Moyen Congo,

Rand, Friedmann & Traylor (1959) confirmed the findings of Salomonsen, at the same time rejecting *A. c. robertsi*, synonymized earlier with the nominate subspecies by Vincent (1952). Winterbottom (1961) expressed the view that the bill-length character used by Rand *et al.*, Salomonsen and others to uphold two mainland races of the Malachite Kingfisher was invalid, as on this variable alone *galerita* was certainly not separable from *cristata*. In a re-examination of the variation, Clancey (1965) confirmed that *cristata* and *galerita* were separable on the basis of ventral colouration. At that time, following Rand *et al.*, it was considered that *robertsi* should be treated as synonymous with *galerita*. Recently in the course of correspondence, Mr. M. P. Stuart Irwin, Director of the National Museum of Rhodesia, Bulawayo, expressed the view that *robertsi* was valid on the basis of the series in the collection under his control, and requested that I reopen the question of its resuscitation.

Variation in the continental populations of *A. cristata* affects the lengths of the bill and the wing, the degree of saturation of the under-parts and the colour of the under wing-coverts. Most arrangements of the populations have relied heavily on size characters, but as I have shown (1965), variation in the colour of the venter provides a more satisfactory means of arranging the populations of this kingfisher into admissible subspecies. When he separated northern Botswana birds as *C. c. longirostris* = *A. c. robertsi*, Roberts (1932) characterized them as averaging smaller than *A. c. cristata* of South Africa, but with the bill longer, and with the underside of the wing paler. The new subspecies was proposed on 17 skins and 16 of nominate *cristata*.

The pooled resources of most South African museums and the National Museum of Rhodesia have enabled me to examine 24 specimens from the population named as *robertsi* and from immediately vicinal populations. Compared with Cape topotypes of the nominate subspecies, material from northwestern Rhodesia, northern Botswana and northern South West Africa stands apart on the starkly whiter throat and abdominal surfaces, and in moderately worn birds by the wholly whiter venter. The under wing-coverts are paler, less reddish cinnamon, and the wing-edge is whiter. The shift to a whiter ventral surface is perhaps better marked in the juveniles than in the adults, and, moreover, seems less likely to have been enhanced in any way by environmental factors, such as solar bleaching or abrasion, as I suspect has been the case in some of the whiter ventralled adults. In juveniles of *robertsi* the venter is whiter from the throat to the abdomen, and the pinkish buff or cinnamon is restricted to the lateral surfaces, there being no tendency to have a breast-band as in the nominate race.

TABLE 1

	Wing measurements (mm) of <i>Alcedo cristata</i>				
		Wing	Mean	Standard deviation	Standard error
<i>A. c. cristata</i>					
Cape	20 ♂♀	59-64	60.5	1.32	0.30
Natal	20 ♂♀	58-63	60.0	1.42	0.32
Transvaal	20 ♂♀	57-61	59.2	1.25	0.28
Rhodesia	25 ♂♀	56-62	58.5	1.56	0.31
<i>A. c. robertsi</i>					
Botswana	22 ♂♀	53.5-59	56.4	1.51	0.32

Compared with the nominate race, *robertsi* also reveals a satisfactory size-difference, the wing being shorter in series (Table 1). The culmen length from base in 12 ♂♀ of *A. c. cristata* from the Cape is 32.5–39.5, versus 35–39 mm in *robertsi*, confirming the findings of Winterbottom that there is no statistically significant difference in bill-length between these two races.

Compared with *A. c. galerita*, *A. c. robertsi* is distinguishable on the basis of the more starkly white throat, white as opposed to buff belly, and in having the under wing-coverts paler and the wing-edge whiter. As in the comparison with the nominate race, *robertsi* wears to a wholly whiter ventrally than in *galerita*. The differences postulated in respect of the juveniles of *robertsi* also hold when a comparison is effected with juvenile material of *galerita*, the former being wholly whiter from throat to crissum. In size there is no difference between the two races.

In conclusion, a re-examination of the bulk of the material of the Malachite Kingfisher held in southern African museums indicates that *A. c. robertsi* should be recognised as a valid subspecies, the characters and ranges of the three mainland African races of this kingfisher being as follows:

(a) *Alcedo cristata cristata* Pallas, 1764

Throat buffy white; breast-band, sides and flanks dull ochraceous-tawny; belly light buff. Juvenile buffy white on throat, rest of venter vinaceous-cinnamon, darkest across the breast. Wings of ♂♀ 58–64 mm (Cape & Natal). *Range*: Southern South West Africa, the Cape, Orange Free State, Natal and Zululand, southern Sudoan, Mozambique, the Transvaal and Rhodesia.

(b) *Alcedo cristata robertsi* Peters, 1945

Throat whiter than last; breast, sides and flanks darker tawny; belly whitish. Worn adults wholly whiter below. Under wing-coverts paler and wing-edge whiter. Juvenile whiter from throat to crissum. Size smaller: wings 53.5–59 mm.

Range: Northern South West Africa, southern Angola, Caprivi Strip, northern Botswana, northwestern Rhodesia and southwestern Zambia.

Remarks: Two specimens of *A. c. robertsi* in the collection of the Transvaal Museum, a ♀ from Kabulabula, northern Botswana, dated 27 July 1930, and an unsexed example from Linyanti, Caprivi Strip, dated 12 October 1970, differ from all other adult Malachite Kingfishers of the three continental races available in having the pileum barred dull grey and black as opposed to caerulean and black, while the normal lustrous bluish violet of the dorsum and wings is replaced by light caerulean blue. The significance of these aberrant specimens is currently uncertain.

(c) *Alcedo cristata galerita* Müller, 1776

Differs from nominate *cristata* in having the breast, sides and flanks darker and more saturated tawny, and with the underwing still darker, the wing-edge duller. Juvenile darker below with a better developed breast-band. Size as in *robertsi*.

Range: Mozambique north of the Limpopo R., Malawi, and Zambia and Angola north of *robertsi*, thence throughout remainder of African mainland range of species.

Acknowledgements: I am grateful to Mr. M. P. Stuart Irwin, Director of the National Museum of Rhodesia, for drawing my attention to the possible validity of *A. c. robertsi* and for placing his material at my disposal. The Directors of the South African Museum (Cape Town), the Natal Museum (Pietermaritzburg), and the Transvaal Museum (Pretoria) also assisted by sending their specimens of this kingfisher to Durban for study.

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Inland observations of Barau's Petrel *Pterodroma barau* on Reunion

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Received 1 December 1977

Barau's Petrel *Pterodroma barau* was first described by Jouanin (1963). Since then several specimens have been collected and many seen, and the available information on the species' biology was summarised by Jouanin & Gill (1967). These authors considered *P. barau* to belong to the group of tropical petrels included in the polytypic species *Pterodroma hasitata*. Only one nest has ever been found, not on Réunion, the type locality, but on Rodrigues (Cheke 1974). This note describes further observations on the species in the Cirque de Cilaos, Réunion, made daily 15-23 January 1974 and, in particular, comments on the diurnal activity pattern at a time when most breeding birds are likely to be incubating eggs.

STUDY AREA, WEATHER AND METHODS

Réunion, a volcanic island of extremely rugged topography, is roughly elliptical in shape, about 70 km long from northwest to southeast and about 50 km from northeast to southwest. The Cirque de Cilaos (c. 21° 7' S, 55° 29' E) is slightly west of centre and approximately 25 km from the southwest coast. It is from the west and southwest coasts that most Barau's Petrels apparently leave the sea en route to their inland nesting grounds (Jouanin & Gill 1967). The contoured map (Fig. 1) indicates the large size of the walls of the Cirque, which become steeper with altitude so that cliffs up to 800 m in height drop down from the major summits such as the Piton des Neiges. The height of the woodland canopy is about 10 m at 1000 m decreasing to 4 m at 2400 m and then low scrub, with the steepest cliffs bare.